

Ground level GPS Re-transmission Signal Strength Calculation for L1

30 meter free-space calculations from transmission point plus transmission point to the wall = 60 meters

Frequency 1575.42 Mhz

$$PTmax = PR + 20 \log_{10} f + 20 \log_{10}(30 + d) - 27.55$$

$$-74.059\text{dbm} = -140\text{dbm} + 20 \log_{10} 1575.42 + 20 \log_{10}(30 + 30) - 27.55$$

$$PTmax(pW) = 10(PTmax/10 + 9)$$

$$15.941\text{pW} = 10(-74.059/10 + 9)$$